CLIMATE MAYORS

Municipal Fleet Electrification

A Case Study of Chula Vista, CA

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Electrification Coalition

Sourcewell
Formerly NJPA

CITY OF CHULA VISTA

Introduction

The Climate Mayors Electric Vehicle Purchasing Collaborative (The Collaborative) is a partnership of Climate Mayors cities, nonprofits and a cooperative procurement agency, working to accelerate the transition of city fleets to electric vehicles (EVs). By creating a new and innovative cooperative purchasing mechanism, the Collaborative can help reduce major barriers to fleet electrification for cities and other public agencies.

This first-of-its-kind, one-stop platform connects cities with total cost of operation assessment tools, a large variety of purchasing options for EVs and charging stations, competitive and transparent pricing, and leasing options that can help capture the federal tax credit for EVs (a current challenge for public agencies). The Collaborative also provides cities with training, best practices, educational materials, and analysis to accelerate the EV transition of their municipal fleets.

The Collaborative is a joint effort of Climate Mayors, the Electrification Coalition and Sourcewell. Climate Mayors is a network of more than 400 U.S. mayors committed to taking meaningful action on climate change and has emerged as a key voice and demonstration of the ongoing commitment of U.S. cities to accelerate climate progress. The Electrification Coalition (EC) is a nonpartisan, non-profit organization committed to accelerating EV adoption on a mass scale. The EC is the lead implementation partner for the Climate Mayors transportation electrification initiative. Sourcewell facilitates a competitive solicitation and awards process for vehicles and service equipment on behalf of their 50,000+ members across North America, and is available to help its partners resolve all challenges and concerns regarding the leasing and contracting process.

Committed Climate Mayors EV Purchasing Collaborative Cities

While this case study focuses on the City of Chula Vista, California, they have joined an initial coalition of municipalities willing to join the Collaborative with their commitment to purchasing EVs:

CA	Alameda County
NM	Albuquerque
MI	Ann Arbor
CO	Aspen
TX	Austin
CA	Berkeley
CA	Beverly Hills
NY	Binghamton
MN	Bloomington
CO	Boulder
FL	Broward County
VT	Burlington
FL	Cape Canaveral
NJ	Cape May Point
NC	Charlotte
CA	Chula Vista

OH	Cincinnati
OH	Cleveland
GA	Cobb County
MD	College Park
OH	Columbus
FL	Coral Gables
OR	Corvallis
OH	Cuyahoga County
CO	Denver
IA	Des Moines
AR	Fayetteville
CO	Fort Collins
CA	Fremont
NE	Fremont
IN	Ft Wayne
MI	Grand Rapids

MD	Greenbelt
CA	Hayward
MN	Hennepin County
NJ	Highland Park
NJ	Hoboken
OR	Hood River
TX	Houston
IA	Iowa City
NY	Ithaca (City)
NY	Ithaca (Town)
NJ	Jersey City
MO	Kansas City
HI	Kauai
TN	Knoxville
OR	Lane County
NE	Lincoln

CA	Long Beach
CA	Los Angeles
CA	Los Angeles County
KY	Louisville
WI	Madison
CA	Manhattan Beach
FL	Miami-Dade County
OR	Milwaukie
NE	New Bedford
NY	New York City
DE	Newark
WA	Olympia
FL	Orlando
CA	Palo Alto
CA	Pasadena

PA	Philadelphia
AZ	Phoenix
AZ	Pima County
NJ	Piscataway Township
PA	Pittsburgh
NJ	Plainsboro
OR	Portland
RI	Providence
CA	Redwood City
CA	Richmond
NY	Rochester
MN	Rochester
CA	Sacramento
UT	Salt Lake City
CA	San Diego

CA	Santa Monica
FL	Sarasota
FL	Satellite Beach
WA	Seattle
AZ	Sedona
MA	Somerville
FL	St Petersburg
MD	Takoma Park
AZ	Tempe
OK	Tulsa
NJ	Verona
DC	Washington
FL	West Palm Beach
CA	Windsor
NY	Yonkers

About Chula Vista, CA

The City of Chula Vista encompasses approximately 50 square miles in southern San Diego County. The City is located seven miles south of the City of San Diego, and seven miles North of the US/Mexico border. With a population of 268,000, the City of Chula Vista is the second largest city in San Diego County, and the 11th largest city in California. Chula Vista has a long record of being a leader in integrating innovative sustainable practices throughout its municipal operations. In 2000, Chula Vista became the first city in San Diego County to adopt a Climate Action Plan (CAP) and is working to modernize its municipal fleet in order to curb emissions, save money, and improve the quality of life for its citizens. Chula Vista has a goal of transitioning forty percent of its fleet to alternative fuel vehicles (AFV) by 2020.

In 2018, the Chula Vista City Council voted to acquire thirty-four new fleet vehicles, including fourteen battery-electric (BEV) vehicles and twenty plug-in hybrid (PHEV) models to replace aging, gasoline-powered cars and trucks that are less reliable and cost more to maintain. These EVs are among the first to be purchased through the Collaborative. This case study examines the motivations behind the City's decision to electrify its fleet with the help of the Climate Mayors EV Purchasing Collaborative.

Strategic Considerations

Chula Vista has experienced an 84 percent population growth since the City's first greenhouse gas (GHG) inventory in 1990. 36 percent of Chula Vista's current population falls between 20 and 44 years-old, and its overall population is expected to grow another 23 percent by 2050. Chula Vista's most-recent CAP, adopted in September 2017, includes ambitious new goals and policies to strengthen the City's climate action efforts in the face of this continued growth. To comply with the CAP, as well as the 2009 California Low Carbon Fuel Standards Act, Chula Vista adopted a policy of replacing all new vehicles with AFVs where possible. Today, 36 percent of the City's fleet is currently composed of AFVs, including forty-one EVs, thirty-four of which are set to be purchased through the Collaborative. The EVs acquired through the Collaborative will reduce annual fuel and maintenance costs by an estimated 50 percent in comparison to comparable internal combustion engine vehicles.

Across the United States, EVs carry a great deal of promise based on numerous grounds, including national security, political, economic, and environmental reasons and several factors were taken into consideration as the City of Chula Vista explored the possibility of adding EVs to its fleet. Chula Vista officials offered insight into their decision-making process by discussing their rationale behind each decision.

Total Cost of Ownership: The low-cost operation and maintenance benefit of EVs is significant, playing a critical role in the City of Chula Vista's fleet acquisition strategy going forward. Vehicles in the Senior Vehicle Patrol (SVP), building code enforcement, and city pool were selected as the first to be replaced based on their age and high use. The SVP vehicles were among the oldest in the fleet (dating back to the late 1990s and early 2000s) have high mileage and are expensive to maintain.

Based on initial success and in an effort to meet the City Operations Sustainability Plan's goal of 40 percent AFVs by 2020, the City is purchasing an additional thirty-four EVs through the Collaborative. The vehicle counts include thirteen Ford Fusion PHEVs which were outfitted for the Investigation Unit of the Chula Vista Police Department, nine Chevy Bolt BEVs and four Chevy Bolt Cargo vehicles. The City of Chula Vista was able to procure twenty-six vehicles for $ 759,697. This provides an average total acquisition cost of under $28,000 per vehicle. This included monetization of the federal tax credit through their leasing option. The estimated cost to fuel the new EVs is 61 percent lower compared to the vehicles being replaced. The benefits are not limited to financial savings and GHG emission reductions; staff time dedicated to maintenance, resources, and hazardous waste are also projected to be significantly lower with the addition of EVs.

Figure 1: Cost per mile and fuel costs savings of battery electric vehicles (BEVs) compared to the vehicles that were replaced - Chula Vista Fleet

	M&R Cost per Mile	*Down Time Hours*	*Fuel Cost*
Old Vehicles	$0.15	1,566	$10,310
Battery Electric Vehicles	$0.03	257	$2,610
Percent Decrease	80%	84%	75%

Mitigating Air Pollution: Improving air quality is a top priority of Chula Vista's sustainability efforts. The addition of thirty-four EVs to the city fleet will yield an estimated 80 percent reduction in GHG emissions. The goals outlined in the City Operations Sustainability Plan are important for reducing the city's contributions to climate change. City officials were also quick to point out that the reduction in emissions is not just about metrics; the related air quality improvements will benefit the residents.

Reducing Fleet Size to Maximize Utilization Rates: The City of Chula Vista reviews fleet vehicle utilization rates and those driven less than 4,000 miles per year are designated for elimination without replacement. With fewer vehicles driving the same number of miles as a larger fleet, utilization rates will automatically increase. EVs specifically see a quicker return on investment as utilization rates increase. As an example, Chula Vista's Custodial Services department will replace its F-250 trucks with Chevrolet Bolt Cargos, and five vehicles will not be replaced at all.

Because most vehicles in the City fleet are assigned, as opposed to pooled, there is no need for all employees to receive EV training. Currently, individual training is conducted for each department when it receives EVs. An intranet page of FAQs related to EVs is under development. Chula Vista Fleet Manager Steve Knapp noted that if the fleet pool were larger, the City would need an outreach and training program. City officials note that

as the availability of more models, including pick-up trucks, evolves, the City's long-term adoption of EVs will further increase.

EV Charging Infrastructure: Taking into consideration the future makeup of the City's fleet and the current low cost of acquisition due to grants and funding, the City has installed 123 Level 2 charging stations. The average cost per charging station (both installation and equipment) was $456. Roughly 30-35 were installed free of charge as they were located in a disadvantaged community, through a pilot project with the local utility, SDG&E. The expectation of City officials is that market demand will grow and lead to the need for an increased number of charging stations. Therefore, the City is proactively preparing for an automotive landscape that is rapidly evolving and might look completely different in three to four years. Another contributing factor to front-loading charging station installations is that lead time on capital construction approval can be lengthier than ordering vehicles. They have learned that by prioritizing infrastructure first, the vehicles can be seamlessly added to the fleet upon arrival. The mantra of the Chula Vista Fleet team is "fleet follows facilities"- meaning that infrastructure is installed, and vehicles are delivered subsequently.

Intangible Benefits: The City also views EVs as a means to demonstrate leadership and environmental stewardship. City officials are enthusiastic to demonstrate that the behavioral changes and technical upgrades are easy for a mid-size city to accomplish. Participating in the Collaborative provides credibility and demonstrates that Chula Vista is taking actionable steps towards meeting the goals outlined in its plans and policies.

Conclusion

The Collaborative is a catalyst for accelerating the transition of city fleets to EVs, cutting emissions, reducing the United States' dependence on oil, and saving taxpayer money. The accelerated transition of municipal fleets to EVs is achieved through this initiative by providing cities with the right information to make EV purchases and acquire charging infrastructure to support electrified fleets. Chula Vista is an example of a fleet that is taking existing city policy and directives, while pairing these with the cost-savings and tools.

For more information about how your agency can partner with the Climate Mayors EV Purchasing Collaborative to take advantage of cooperative purchasing and rich technical assistance, please visit www.DriveEVfleets.org or call (800) 267-7830.